



Serial No.: 10/813,314  
Confirmation No.: 3626  
Applicant: KIPPIE, David P.  
Atty. Ref.: PA-00404US

**AMENDMENTS TO THE CLAIMS:**

Please amend the specification as indicated below:

1. (Currently Amended) A monovalent cation containing well fluid consisting essentially of ~~comprising~~: a ~~single~~ brine system and an amount of a starch derivative selected such that the well fluid has the following characteristics:

(a) a low shear rate viscosity greater than about 5,000 centipoise;

(b) a high shear rate viscosity at  $511 \text{ sec}^{-1}$  in the range from about 15 to about 70 centipoise measured at 120°F, wherein the ~~single~~ brine system consists essentially of at least 0.6 equivalents per liter of a water soluble monovalent cation salt, wherein the anion of the salt is a halide, wherein the monovalent cation salt is substantially free of divalent cations, and wherein the well fluid is substantially free of xanthan gum.

2. (Original) The well fluid of claim 1, wherein the starch derivative comprises a pre-gelatinized crosslinked amylopectin starch which has been crosslinked to about 25% to about 60% of the maximum attainable viscosity.

3. (Original) The well fluid of claim 1, further comprising a particulate bridging agent which is substantially insoluble in the aqueous brine.

4. (Previously Amended) A method of treating a well that comprises:

adding a well fluid consisting essentially of ~~comprising~~ a ~~single~~ brine system and an amount of a starch derivative selected such that the well fluid has the following characteristics:



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(a) a low shear rate viscosity greater than about 5,000 centipoise;

(b) a high shear rate viscosity at  $511 \text{ sec}^{-1}$  in the range from about 15 to about 70 centipoise measured at  $120^{\circ}\text{F}$  to the well; and

causing the well fluid to travel through at least a portion of the well, wherein the ~~single~~ brine system consists essentially of at least 0.6 equivalents per liter of a water soluble monovalent cation salt, wherein the anion of the salt is a halide, wherein the monovalent cation salt is substantially free of divalent cations, and wherein the well fluid is substantially free of xanthan gum.

5. (Currently Amended) A method of treating a well that comprises:

adding a well fluid consisting essentially of a brine system, a particulate bridging agent which is substantially insoluble in the aqueous brine, and an amount of a starch derivative selected such that the well fluid has the following characteristics:

(a) a low shear rate viscosity greater than about 5,000 centipoise;

(b) a high shear rate viscosity at  $511 \text{ sec}^{-1}$  in the range from about 15 to about 70

centipoise measured at  $120^{\circ}\text{F}$  to the well; and

causing the well fluid to travel through at least a portion of the well, wherein the ~~single~~ brine system consists essentially of at least 0.6 equivalents per liter of a water soluble monovalent cation salt, wherein the anion of the salt is a halide, wherein the monovalent cation salt is substantially free of divalent cations, and wherein the well fluid is substantially free of xanthan gum.

6. (Currently Amended) A monovalent cation containing well fluid consisting essentially of ~~comprising~~ a ~~single~~ brine system, and a viscosifying agent including a starch derivative, wherein



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the starch derivative is a pregelatinized crosslinked amylopectin starch which has been crosslinked to about 25% to about 60% of the maximum attainable viscosity, wherein the single brine system consists essentially of at least 0.6 equivalents per liter of a water soluble monovalent cation salt, wherein the anion of the salt is a halide, wherein the monovalent cation salt is substantially free of divalent cations, and wherein the well fluid is substantially free of xanthan gum.

7. (canceled)

8. (canceled)

9. (Previously Presented) The monovalent cation containing well fluid of Claim 2, wherein the pre-gelatinized crosslinked amylopectin starch comprises less than 10 wt% amylase.

10. (Previously Presented) The monovalent cation containing well fluid of Claim 6, wherein the pre-gelatinized crosslinked amylopectin starch comprises less than 10 wt% amylase.

11. (Currently Amended) A monovalent cation containing well fluid consisting essentially of ~~comprising~~ an aqueous monovalent brine system and an amount of a starch derivative selected such that the well fluid has the following characteristics:

(a) a low shear rate viscosity greater than about 5,000 centipoise;

(b) a high shear rate viscosity at  $511 \text{ sec}^{-1}$  in the range from about 15 to about 70

centipoise measured at 120°F, wherein the aqueous monovalent brine system comprises at least 90% by weight of the well fluid, and wherein the aqueous monovalent brine system consists essentially of at least 0.6 equivalents per liter of a water soluble monovalent cation salt, wherein



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the anion of the salt is a halide, wherein the monovalent cation salt is substantially free of divalent cations, and wherein the well fluid is substantially free of xanthan gum.

12. (Previously Presented) The well fluid of claim 11, wherein the starch derivative comprises a pre-gelatinized crosslinked amylopectin starch which has been crosslinked to about 25% to about 60% of the maximum attainable viscosity.

13. (Previously Presented) The monovalent cation containing well fluid of Claim 12, wherein the pre-gelatinized crosslinked amylopectin starch comprises less than 10 wt% amylase.

14. (Currently Amended) A monovalent cation containing well fluid consisting essentially of an aqueous monovalent brine system. The well fluid of claim 11, further comprising a particulate bridging agent which is substantially insoluble in the aqueous brine, and an amount of a starch derivative selected such that the well fluid has the following characteristics:

(a) a low shear rate viscosity greater than about 5,000 centipoise;

(b) a high shear rate viscosity at  $511 \text{ sec}^{-1}$  in the range from about 15 to about 70

centipoise measured at 120°F, wherein the aqueous monovalent brine system comprises at least 90% by weight of the well fluid, and wherein the aqueous monovalent brine system consists essentially of at least 0.6 equivalents per liter of a water soluble monovalent cation salt, wherein the anion of the salt is a halide, wherein the monovalent cation salt is substantially free of divalent cations, and wherein the well fluid is substantially free of xanthan gum.



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15. (Currently Amended) A method of treating a well that comprises:

adding a well fluid consisting essentially of comprising an aqueous monovalent brine system and an amount of a starch derivative selected such that the well fluid has the following characteristics:

(a) a low shear rate viscosity greater than about 5,000 centipoise;

(b) a high shear rate viscosity at  $511 \text{ sec}^{-1}$  in the range from about 15 to about 70 centipoise measured at 120°F to the well; and

causing the well fluid to travel through at least a portion of the well, wherein the aqueous monovalent brine system comprises at least 90% by weight of the well fluid, and wherein the aqueous monovalent brine system consists essentially of at least 0.6 equivalents per liter of a water soluble monovalent cation salt, wherein the anion of the salt is a halide, wherein the monovalent cation salt is substantially free of divalent cations, and wherein the well fluid is substantially free of xanthan gum.

16. (Currently Amended) A method of treating a well that comprises:

adding a well fluid consisting essentially of an aqueous monovalent brine system, The method of claim 15, wherein the fluid further comprises a particulate bridging agent which is substantially insoluble in the aqueous brine, and an amount of a starch derivative selected such that the well fluid has the following characteristics:

(a) a low shear rate viscosity greater than about 5,000 centipoise;

(b) a high shear rate viscosity at  $511 \text{ sec}^{-1}$  in the range from about 15 to about 70 centipoise measured at 120°F to the well; and



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causing the well fluid to travel through at least a portion of the well, wherein the aqueous monovalent brine system comprises at least 90% by weight of the well fluid, and wherein the aqueous monovalent brine system consists essentially of at least 0.6 equivalents per liter of a water soluble monovalent cation salt, wherein the anion of the salt is a halide, wherein the monovalent cation salt is substantially free of divalent cations, and wherein the well fluid is substantially free of xanthan gum.

17. (Currently Amended) A monovalent cation containing well fluid comprising: an aqueous monovalent-brine system, and a viscosifying agent including a starch derivative, wherein the starch derivative is a pregelatinized crosslinked amylopectin starch which has been crosslinked to about 25% to about 60% of the maximum attainable viscosity, wherein the aqueous monovalent brine system comprises at least 90% by weight of the well fluid, and wherein the aqueous monovalent brine system consists essentially of at least 0.6 equivalents per liter of a water soluble monovalent cation salt, wherein the anion of the salt is a halide, wherein the monovalent cation salt is substantially free of divalent cations, and wherein the well fluid is substantially free of xanthan gum.

18. (Previously Presented) The monovalent cation containing well fluid of Claim 17, wherein the pre-gelatinized crosslinked amylopectin starch comprises less than 10 wt% amylase.

19. (New) A well fluid comprising:

a brine system, wherein the brine system consists essentially of water and a water soluble monovalent cation salt, wherein the monovalent cation salt is at least 0.6 equivalents per liter, wherein the anion of the salt is a halide, and wherein the monovalent cation salt is substantially free of divalent cations; and



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an amount of a starch derivative selected such that the well fluid has the following characteristics:

(a) a low shear rate viscosity greater than about 5,000 centipoise;

(b) a high shear rate viscosity at  $511 \text{ sec}^{-1}$  in the range from about 15 to about 70

centipoise measured at  $120^{\circ}\text{F}$ ,

and wherein the well fluid is substantially free of xanthan gum.